40 CFR Parts 261 and 271

[FRL-4536-5]

RIN 2050-AC32

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristic Revision

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA or Agency) is amending its hazardous waste regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA) for testing conducted to evaluate a solid waste for the Toxicity Characteristic. Specifically, this rule removes the quality assurance (QA) requirement found in Method 1311, Toxicity Characteristic Leaching Procedure (TCLP), for correcting measured values for analytical bias (also referred to within this rule as spike recovery correction). However, this rule retains appropriate QA provisions, including that matrix spike recoveries be calculated and that the method of standard additions be employed as the quantitation method for metallic contaminants when appropriate as specified in the method.

EFFECTIVE DATE: November 24, 1992.

ADDRESSES: The official record for this rulemaking (Docket No. F-92-TCLC-FFFFF) is located at the U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 (room M-2427), and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The public may copy a maximum of 100 pages of material from any one regulatory docket at no cost; additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll free) or call (703) 920-9810; or, for hearing impaired, call TDD (800) 553-7672 or (703) 486-3323. For information concerning the TCLP, contact Kim Kirkland, Office of Solid Waste (OS-331), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-4761.

> > > > Preamble has not been included in this file. < < < <

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is amended as set forth below.

PART 261-IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Part 261, appendix II is amended by revising the test of § 8.0 preceding table I to read as follows:

Appendix II-Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

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8.0 Quality Assurance

8.1 A minimum of one blank (using the same extraction fluid as used for the samples) must be analyzed for every 20 extractions that have been conducted in an extraction vessel.

8.2 A matrix spike shall be performed for each waste type (e.g., wastewater treatment sludge, contaminated soil, etc.) unless the result exceeds the regulatory level and the data are being used solely to demonstrate that the waste property exceeds the regulatory level. A minimum of one matrix spike must be analyzed for each analytical batch. As a minimum, follow the matrix spike addition guidance provided in each analytical method.

8.2.1 Matrix spikes are to be added after filtration of the TCLP extract and before preservation. Matrix spikes should not be added prior to TCLP extraction of the sample.

8.2.2 In most cases, matrix spikes should be added at a concentration equivalent to the corresponding regulatory level. If the analyte concentration is less than one half the regulatory level, the spike concentration may be as low as one half of the analyte concentration, but may not be less than five times the method detection limit. In order to avoid differences in matrix effects, the matrix spikes must be added to the same nominal volume of TCLP extract as that which was analyzed for the unspiked sample.

8.2.3 The purpose of the matrix spike is to monitor the performance of the analytical methods used, and to determine whether matrix interferences exist. Use of other internal calibration methods, modification of the analytical methods, or use of alternate analytical methods may be needed to accurately measure the analyte concentration of the TCLP extract when the recovery of the matrix spike is below the expected analytical method performance.

8.2.4 Matrix spike recoveries are calculated by the following formula:

%R (% Recovery) = $100 (X_s-X_u)/K$

where:

X_s = measured value for the spiked sample,
X_u = measured value for the unspiked sample, and
K = known value of the spike in the sample.

8.3 All quality control measures described in the appropriate analytical methods shall be followed.

8.4 The use of internal calibration quantitation methods shall be employed for a metallic contaminant if: (1) Recovery of the contaminant from the TCLP extract is not at least 50% and the concentration does not exceed the regulatory level, and (2) The concentration of the contaminant measured in the extract is within 20% of the appropriate regulatory level.

8.4.1 The method of standard additions shall be employed as the internal calibration quantitation method for each metallic contaminant.

8.4.2 The method of standard additions requires preparing calibration standards in the sample matrix rather than reagent water or blank solution. It requires taking four identical aliquots of the solution and adding known amounts of standard to three of these aliquots. The fourth aliquot is the unknown. Preferably, the first addition should be prepared so that the resulting concentration is approximately 50% of the expected concentration of the sample. The second and third additions should be prepared so that the concentrations are approximately 100% and 150% of the expected concentration of the sample. All four aliquots are maintained at the same final volume by adding reagent water or a blank solution, and may need dilution adjustment to maintain the signals in the linear range of the instrumental technique. All four aliquots are analyzed.

8.4.3 Prepare a plot, or subject data to linear regression, of instrumental signals or external-calibration-derived concentrations as the dependent variable (y-axis) versus concentrations of the additions of standard as the independent variable (x-axis). Solve for the intercept of the abscissa (the independent variable, x-axis) which is the concentration in the unknown.

84.4.4 Alternately, subtract the instrumental signal or external-calibration-derived concentration of the unknown (unspiked) sample from the instrumental signals or external-calibration-derived concentrations of the standard additions. Plot or subject data to linear regression of the corrected instrumental signals or external-calibration-derived concentrations as the dependent variable versus the independent variable. Derive concentrations for unknowns using the internal calibration curve as if it were an external calibration curve.

8.5 Samples must undergo TCLP extraction within the following time periods:

Sample Maximum Holding Times (Days)

	From: field collection to TCLP extraction	From: TCLPextraction to: preparative extraction	From: preparative extraction to: determinative analysis	Total elapsed time
Volatiles	14	NA	14	28
Semi-volatiles	14	7	40	61
Mercury	28	NA	28	56
Metals, except mercury	180	NA	180	360

NA=Not applicable.

If sample holding times are exceeded, the values obtained will be considered minimal concentrations. Exceeding the holding time is not acceptable in establishing that a waste does not exceed the regulatory level. Exceeding the holding time will not invalidate characterization if the waste exceeds the regulatory level.

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>>>> § 271 has not been included because it is not required as part of a State's Hazardous Waste Program. <<<<

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